

Louisville Metro Air Pollution Control District
850 Barret Ave., Louisville, Kentucky 40204
30 September 2009

Title V Statement of Basis

Company: Louisville Medical Center Steam Plant

Plant Location: 235 Abraham Flexner Way, Louisville, Kentucky 40202

Date Application Received: 15 July 2004

Date Admin Complete: 13 September 2004

Date of Draft Permit: 15 June 2009

Date of Proposed Permit: 17 July 2009

District Engineer: Yiqiu Lin

Permit No: 89-97-TV (R1)

Plant ID: 0148

SIC Code: 4961

NAICS: 221330

AFS: 00148

Introduction:

This permit will be issued pursuant to: (1) Regulation 2.16, (2) Title 40 of the Code of Federal Regulations Part 70, and (3) Title V of the Clean Air Act Amendments of 1990. Its purpose is to identify and consolidate existing District and Federal air requirements and to provide methods of determining continued compliance with these requirements.

Jefferson County is classified as an attainment area for lead (Pb), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), carbon monoxide (CO), 1 hr and 8 hr ozone (O₃), and particulate matter less than 10 microns (PM₁₀); and is a non-attainment area for particulate matter less than 2.5 microns (PM_{2.5}).

Application Type/Permit Activity:

☐ Initial Issuance

☐ Permit Revision

☐ Administrative

☐ Minor

☐ Significant

☒ Permit Renewal

Compliance Summary:

☒ Compliance certification signed

☐ Compliance schedule included

☐ Source is out of compliance

☒ Source is operating in compliance

I. Source Information

1. **Product Description:** Steam production and distribution plant
2. **Process Description:** Louisville Medical Center Steam Plant provides steam and chilled water services to the downtown hospital complex. The steam generated is utilized for medical sterilization and climate control for buildings.
3. **Site Determination:** There are no other facilities that are contiguous or adjacent and under common control.
4. **Emission Unit Summary:**

Emission Unit	Equipment Description
U1	Three (3) steam boilers designated as Boiler #1, #2, and #3
U2	Three (3) steam boilers designated as Boiler #4, #5, and #6
U3	One (1) ash handling and transfer operation
U4	One (1) emergency generator
U5	One (1) coal handling and transfer operation

5. **Fugitive Sources:** There are fugitive PM emissions from the coal handling and transfer operation and the ash handling and transfer operation.
6. **Permit Revisions:**

Revision No.	Issue Date	Public Notice Date	Type	Attachment No./Page No.	Description
N/A	01/31/2000	11/21/1999	Initial	Entire Permit	Initial Permit Issuance
R1	9/04/2009	06/15/2009	Renewal	Entire Permit	Scheduled Permit Renewal; Incorporation of Construction Permit 244-08-C for Boiler Modification and Revised NOx RACT Plan.

7. Emission Summary:

Pollutant	Actual Emissions (tpy) 2007 Data	Pollutant that triggered Major Source Status (based on PTE)
CO	96.2	Yes
NO_x	141.1	Yes
SO₂	453.8	Yes
PM	12.9	Yes
VOC	0.82	No
Single HAP > 1 tpy	HCl = 19.2 HF = 2.4	Yes
Total HAPs	21.6	Yes

8. Applicable Requirements:

☐ PSD ☒ NSPS ☒ SIP ☐ MACT
☐ NSR ☐ NESHAPS ☒ District-Origin ☐ Other

9. Future MACT Requirements: The federal regulation 40 CFR 63, Subpart DDDDD has been vacated since June 8, 2007, therefore the boiler MACT requirements will not be included in this permit.

10. Referenced Federal Regulations in Permit:

40 CFR Part 64 Compliance Assurance Monitoring for Major Stationary Sources

 40 CFR 60 Subpart Dc Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

II. Regulatory Analysis

- 1. Acid Rain Requirements:** The source is not subject to the Acid Rain Program.
- 2. Stratospheric Ozone Protection Requirements:** Title VI of the CAAA regulates ozone depleting substances and requires a phase-out of their use. This rule applies to any facility that manufactures, sells, distributes, or otherwise uses any of the listed chemicals. This source does not manufacture, sell, or distribute any of the listed chemicals. The source's use of listed chemicals is that in fire

extinguishers, chillers, air conditioners and other HVAC equipment.

3. **Prevention of Accidental Releases 112(r):** The source does not manufacture, process, use, store, or otherwise handle one or more of the regulated substances listed in 40 CFR Part 68, Subpart F, and District Regulation 5.15, Chemical Accident Prevention Provisions, in a quantity in excess of the corresponding specified threshold amount.
4. **40 CFR Part 64 Applicability Determination:** The source is subject to 40 CFR Part 64 - *Compliance Assurance Monitoring for Major Stationary Sources* since the source is major for PM and needs to apply control devices to ensure the compliance with the PM emission standards specified in the Title V permit.
5. **Basis of Regulation Applicability**

- a. **Plant-wide**

Louisville Medical Center Steam Plant is a major source for CO, NO_x, SO₂, PM, single HAP, and total HAPs. Regulation 2.16 - *Title V Operating Permits* establishes requirements for major sources.

The source is subject to a *plant-wide* total heat input limit of less than 418 MMBtu/hr. The Louisville Medical Center Steam Plant requested to increase the plant-wide heat input capacity from the boilers from 362 MMBtu/hr to 418 MMBtu/hr. Regulation 2.04 allows an existing source to undergo a major modification provided the emissions will not cause a violation of a National Ambient Air Quality Standard. LMSCP converted Boiler #1 from coal to natural gas. There will not be an increase in the emissions from Boilers #2, #4, #5, and #6. The increase in emissions will result from removing the 10% ACF from Boiler #1, however, the conversion from coal to natural gas combustion for Boiler #1 allowed the company to “net-out” and PSD was not triggered. This 418 MMBtu/hr limit will be accomplished by operating not more than five boilers simultaneously.

Regulations 5.01, 5.21, and 5.23 (STAR Program) establishes requirements for environmental acceptability of toxic air contaminants (TACs) and the requirement to comply with all applicable emission standards. Louisville Medical Center Steam Plant submitted their Category 1 and Category 2 TAC Environmental Acceptability Demonstration to the District on December 27, 2006. The potential emissions of Arsenic, Cadmium, Chromium (trivalent), Chromium (hexavalent), and Nickel could exceed the de minimis threshold values; therefore Tier 4 air dispersion modeling was performed.

Based on Tier 4 ISCST3 refined air modeling, the carcinogenic risk for each Category 1 TAC is below 1.0 for non-industrial property and below 10.0 for industrial property with the annual product throughput limits specified in this permit and utilizing control devices. All non-deminimis sources of TACs including Arsenic, Cadmium, Chromium (trivalent), Chromium (hexavalent), and Nickel were included in the STAR Category 1 TAC EA Demonstration. The carcinogenic risk for all Category 1 TACs for all processes is below 7.5 for non-industrial property and below 75.0 for industrial property. Since the maximum off-site Carcinogenic Risk meets the more stringent non-industrial R_C of < 1.0 for individual process/process equipment and the plant-wide cumulative risk is < 7.5 , the source has demonstrated compliance with the EA Goals.

b. **Emission Unit U1 - Steam boilers designated as Boiler #1, #2, and #3**

i. **Equipment:**

P/PE	Capacity	Installation Date	Applicable Regulation	Basis for Applicability
Boiler #1	56 MMBtu/hr	Installed in 1954; modified in 2004	7.06	New indirect heat exchangers for which construction or modification is commenced after September 1, 1972 are subject to Regulation 7.06.
			40 CFR Part 60 Subpart D _c	Subpart D _c applies to steam generating unit for which construction or modification is commenced after June 9, 1989 and that has a maximum design heat input capacity between 10 to 100 MMBtu/hr.
			6.42	Regulation 6.42 applies to the NO _x -emissions from all NO _x -emitting facilities located at all major NO _x -emitting sources. The source is major for NO _x .
			5.01	Regulation 5.01 establishes the requirements for Environmental Acceptability for TACs. The source is a Group I company with Category 1TACs which could exceed the de minimis values.
Boiler #2	56 MMBtu/hr	1954	6.07	Existing indirect heat exchangers for which construction or modification is commenced before September 1, 1972 are subject to Regulation 6.07.

P/PE	Capacity	Installation Date	Applicable Regulation	Basis for Applicability
			6.42	Regulation 6.42 applies to the NOx-emissions from all NOx-emitting facilities located at all major NOx-emitting sources. The source is major for NOx.
			5.01	Regulation 5.01 establishes the requirements for Environmental Acceptability for TACs. The source is a Group I company with Category 1TACs which could exceed the de minimis values.
Boiler #3	56 MMBtu/hr	1954	6.07	Existing indirect heat exchangers for which construction or modification is commenced before September 1, 1972 are subject to Regulation 6.07.
			6.42	Regulation 6.42 applies to the NOx-emissions from all NOx-emitting facilities located at all major NOx-emitting sources. The source is major for NOx.
			5.01	Regulation 5.01 establishes the requirements for Environmental Acceptability for TACs. The source is a Group I company with Category 1TACs which could exceed the de minimis values.

ii. **Standards/Operating Limits**

1) **NO_x**

- (a) Regulation 6.42, section 4.3 requires permit applicant for NOx-emitting facilities to propose RACT emission-limiting standards and RACT emission control technology. The NOx RACT Plan-Amendment 2 adopted by the Air Pollution Control Board of Jefferson County on March 19, 2008.
- (b) Construction permit 244-08 allows an increase in the maximum plant-wide heat input capacity from 362 MMBtu/hr to 418 MMBtu/hr and the conversion of Boiler #1 from coal to natural gas. It was demonstrated that these modifications did not trigger

PSD review.

- (c) Construction permit 244-08 allows for the removal of the 10% annual capacity factor limit for Boiler #1.
- (d) Boiler #1 is subject to Regulation 7.06. However, Regulation 7.06, section 6, Standard for NO_x, is applicable for boilers with a capacity of 250 MMBtu/hr or more. There is no applicable NO_x emission standard in Regulation 7.06 for Boiler #1.
- (e) Boiler #1 is subject to 40 CFR 60, Subpart D_c. However, there is no NO_x emission standard in Subpart D_c.
- (f) Boiler #2 and #3 are subject to Regulation 6.07. However, there is no NO_x emission standard in Regulation 6.07.

2) **SO₂**

- (a) Boiler #1 is subject to Regulation 7.06. In accordance with Regulation 7.06, section 5, the emission standard for SO₂ is 0.80 lb/MMBtu/hr. Boiler #1 is also subject to 40 CFR 60, Subpart D_c. However, there is no SO₂ emission standard for natural gas combusted boilers in Subpart D_c.
- (b) Boiler #2 and #3 are subject to Regulation 6.07. The emission standard for SO₂ is determined in accordance with Regulation 6.07, section 4.1 as follows:
 Total Heat Input Capacity = 168 MMBtu/hr
 Natural Gas: 1.0 lb/MMBtu (Table 2)
 Coal: $9.46 \times (168)^{-0.374} = 1.39 \text{ lb/MMBtu}$

3) **PM**

- (a) Boiler #1 is subject to Regulation 7.06. In accordance with Regulation 7.06, section 4, the emission standard for PM is 0.10 lb/MMBtu/hr. Boilers #1 is also subject to 40 CFR 60, Subpart D_c. However, there is no PM emission standard for natural gas combusted boilers in Subpart D_c.
- (b) Boiler #2 and #3 are subject to Regulation 6.07.

The emission standard for PM is determined in accordance with Regulation 6.07, section 3.1 as follows:

Total Heat Input Capacity = 168 MMBtu/hr

PM limit = $0.9634 \times (168)^{-0.374} = 0.288 \text{ lb/MMBtu}$

4) **Opacity**

The boilers are subject to the opacity standards in accordance with Regulation 6.07, section 3.2 and Regulation 7.06, section 4.2.

5) **TAC**

Regulation 5.21, section 2.2 establishes Environmental Acceptability Goals for TACs and Regulation 5.20 provides methodology for determining benchmark ambient concentration of TAC. In accordance with Regulation 5.20 and 5.21, the source shall not allow any TAC emissions to exceed environmentally acceptable levels. The source shall not combust any fuels other than coal or natural gas without prior notification to, and approval by, the District.

iii. **Monitoring**

1) **NO_x /SO₂ /PM /Opacity**

Regulation 6.07 and 7.06 does not require any specific monitoring requirements for NO_x, SO₂, PM, and Opacity, however, Regulation 2.16, section 4.1.9.1 establishes monitoring requirements to assure ongoing compliance with the terms and conditions of the permit. The source has the monitoring requirements as specified in Specific Condition S2.a through S2.d.

2) **TAC**

The source shall refer to the monitoring requirements for PM.

iv. **Record Keeping**

1) **NO_x /SO₂ /PM /Opacity**

(a) Regulation 6.07 and 7.06 does not require any specific record keeping requirements for NO_x, SO₂,

PM, and Opacity, however, Regulation 2.16, section 4.1.9.2 establishes record keeping requirements to assure ongoing compliance with the terms and conditions of the permit. The source has the record keeping requirements as specified in Specific Condition S3.a through S3.d.

- (b) Boiler #1 is subject to 40 CFR 60 Subpart Dc. In a letter dated March 7, 2002 from EPA Region 4, EPA has identified certain types of alternative record keeping requirements for units that are regulated under 40 CFR 60 Subpart Dc that can be approved by the District without additional input from EPA.

2) **TAC**

The source shall refer to the recording keeping requirements for PM.

v. **Reporting**

NO_x /SO₂ /PM /Opacity /TAC

Regulation 6.07 and 7.06 does not require any specific reporting requirements for NO_x, SO₂, PM, and Opacity, however, Regulation 2.16, section 4.1.9.3 requires sufficient reporting to assure ongoing compliance with the terms and conditions of the permit. The source is required to identify all deviations from permit requirements for each pollutant and report semi-annually as specified in Specific Condition S4.a through S4e.

vi. **Testing**

NO_x

The source is required to conduct compliance testing in according with Regulation 6.42 and the NO_x RACT Plan.

c. **Emission Unit U2 - Steam boilers designated as Boiler #4, #5, and #6**

i. **Equipment:**

P/PE	Capacity	Installation Date	Applicable Regulation	Basis for Applicability
Boiler #4	102 MMBtu/hr	1969	6.07	Existing indirect heat exchangers for which construction or modification is commenced before September 1, 1972 are subject to Regulation 6.07.
			6.42	Regulation 6.42 applies to the NOx-emissions from all NOx-emitting facilities located at all major NOx-emitting sources. The source is major for NOx.
			5.01	Regulation 5.01 establishes the requirements for Environmental Acceptability for TACs. The source is a Group I company with Category 1TACs which could exceed the de minimis values.
Boiler #5	102 MMBtu/hr	1969	6.07	Existing indirect heat exchangers for which construction or modification is commenced before September 1, 1972 are subject to Regulation 6.07.
			6.42	Regulation 6.42 applies to the NOx-emissions from all NOx-emitting facilities located at all major NOx-emitting sources. The source is major for NOx.
			5.01	Regulation 5.01 establishes the requirements for Environmental Acceptability for TACs. The source is a Group I company with Category 1TACs which could exceed the de minimis values.

P/PE	Capacity	Installation Date	Applicable Regulation	Basis for Applicability
Boiler #6	100 MMBtu/hr	1982	7.06	Existing indirect heat exchangers for which construction or modification is commenced before September 1, 1972 are subject to Regulation 7.06.
			6.42	Regulation 6.42 applies to the NO _x -emissions from all NO _x -emitting facilities located at all major NO _x -emitting sources. The source is major for NO _x .
			5.01	Regulation 5.01 establishes the requirements for Environmental Acceptability for TACs. The source is a Group I company with Category 1TACs which could exceed the de minimis values.

ii. **Standards/Operating Limits**

1) **NO_x**

- (a) Regulation 6.42, section 4.3 requires permit applicant for NO_x-emitting facilities to propose RACT emission-limiting standards and RACT emission control technology. The NO_x RACT Plan-Amendment 2 adopted by the Air Pollution Control Board of Jefferson County on March 19, 2008.
- (b) Construction permit 244-08 allows an increase in the maximum plant-wide heat input capacity from 362 MMBtu/hr to 418 MMBtu/hr and the conversion of Boiler #1 from coal to natural coal. It was demonstrated that these modifications did not trigger PSD review.
- (c) Boiler #4 and #5 are subject to Regulation 6.07. However, there are no NO_x emission standards in Regulation 6.07.
- (d) Boiler #6 is subject to Regulation 7.06. However, Regulation 7.06, section 6, Standard for NO_x, is applicable for boilers with a capacity of 250

MMBtu/hr or more. There is no applicable NOx emission standard in Regulation 7.06 for Boiler #6.

2) **SO₂**

- (a) Boilers #4 and #5, the 102 MMBtu/hr Vogt boiler installed in 1969 is subject to Regulation 6.07. The emission standard for SO₂ is determined in accordance with Regulation 6.07, section 4.1 as follows:

Total Heat Input Capacity = 204 MMBtu/hr

Natural Gas: $7.72 * (204)^{-0.4106} = 0.87 \text{ lb/MMBtu}$

Coal: $9.46 * (204)^{-0.374} = 1.29 \text{ lb/MMBtu}$

- (b) Boilers #6, the 100 MMBtu/hr Vogt boilers installed in 1982, are subject to Regulation 7.06. The emission standard for SO₂ is determined in accordance with Regulation 7.06, section 5.1.3.2 as follows:

Total Heat Input Capacity = 100 MMBtu/hr

Coal: $9.46 * (100)^{-0.374} = 1.69 \text{ lb/MMBtu}$

3) **PM**

- (a) Boilers #4 and #5, the 102 MMBtu/hr Vogt boiler installed in 1969 is subject to Regulation 6.07. The emission standard for PM is determined in accordance with Regulation 6.07, section 3.1 as follows:

Total Heat Input Capacity = 204 MMBtu/hr

PM limit = $0.9634 * (204)^{-0.374} = 0.275 \text{ lb/MMBtu}$

- (b) Boilers #6, the 100 MMBtu/hr Vogt boilers installed in 1982, are subject to Regulation 7.06. The emission standard for PM is determined in accordance with Regulation 7.06, section 4.1.4 as follows:

Total Heat Input Capacity = 100 MMBtu/hr

PM limit = $1.919 * (100)^{-0.535} = 0.163 \text{ lb/MMBtu}$

4) **Opacity**

The boilers are subject to the opacity standards in accordance with Regulation 6.07, section 3.2 and Regulation 7.06, section 4.2.

5) **TAC**

Regulation 5.21, section 2.2 establishes Environmental Acceptability Goals for TACs and Regulation 5.20 provides methodology for determining benchmark ambient concentration of TAC. In accordance with Regulation 5.20 and 5.21, the source shall not allow any TAC emissions to exceed environmentally acceptable levels. The source shall not combust any fuels other than coal or natural gas without prior notification to, and approval by, the District.

iii. **Monitoring**

1) **NO_x /SO₂ /PM /Opacity**

Regulation 6.07 and 7.06 does not require any specific monitoring requirements for NO_x, SO₂, PM, and Opacity, however, Regulation 2.16, section 4.1.9.1 establishes monitoring requirements to assure ongoing compliance with the terms and conditions of the permit. The source has the monitoring requirements as specified in Specific Condition S2.a through S2.d.

2) **TAC**

The source shall refer to the monitoring requirements for PM.

iv. **Record Keeping**

1) **NO_x /SO₂ /PM /Opacity**

Regulation 6.07 and 7.06 does not require any specific record keeping requirements for NO_x, SO₂, PM, and Opacity, however, Regulation 2.16, section 4.1.9.2 establishes record keeping requirements to assure ongoing compliance with the terms and conditions of the permit. The source has the record keeping requirements as specified in Specific Condition S3.a through S3.d.

2) **TAC**

The source shall refer to the record keeping requirements for PM.

v. **Reporting****NO_x /SO₂ /PM /Opacity /TAC**

Regulation 6.07 and 7.06 does not require any specific reporting requirements for NO_x, SO₂, PM, and Opacity, however, Regulation 2.16, section 4.1.9.3 requires sufficient reporting to assure ongoing compliance with the terms and conditions of the permit. The source is required to identify all deviations from permit requirements for each pollutant and report semi-annually as specified in Specific Condition S4.a through S4e.

vi. **Testing****NO_x**

The source is required to conduct compliance testing in according with Regulation 6.42 and the NO_x RACT Plan.

d. **Emission Unit U3 - Ash handling and transfer operation**i. **Equipment:**

P/PE	Capacity	Installation Date	Applicable Regulation	Basis for Applicability
Bottom ash hopper	N/A	1969	6.09	The facilities are subject to the PM emission standards in Regulation 6.09 and were installed before September 1, 1976.
Ash grinder				
Sifter hopper				
Ash silo			5.01	Regulation 5.01 establishes the requirements for Environmental Acceptability for TACs. The source is a Group I company with Category 1TACs which could exceed the de minimis values.
Truck loading operation				

ii. **Standards/Operating Limits**1) **PM**

The emission standard for PM is determined in accordance with Regulation 6.09, section 3.2:

$$\begin{aligned}\text{Total ash throughput} &= 1.75 \text{ ton/hr} \\ \text{PM limit} &= 4.10 * (1.75)^{0.67} = 5.95 \text{ lb/hr}\end{aligned}$$

2) **Opacity**

Regulation 6.09, section 3.1 limits the visible emissions to twenty percent (20%) opacity.

3) **TAC**

Regulation 5.21, section 2.2 establishes Environmental Acceptability Goals for TACs and Regulation 5.20 provides methodology for determining benchmark ambient concentration of TAC. In accordance with Regulation 5.20 and 5.21, the source shall not allow any TAC emissions to exceed environmentally acceptable levels.

iii. **Monitoring**

1) **PM**

There are no compliance monitoring requirements for this equipment. The potential uncontrolled PM emissions are less than the applicable emission standard.

2) **Opacity**

Regulation 6.09 does not require any specific monitoring requirements for opacity, however, Regulation 2.16, section 4.1.9.1 requires sufficient monitoring to assure compliance with the terms and conditions of the permit. The source is required to conduct periodic visible emission surveys to assure ongoing compliance with the opacity standard.

3) **TAC**

This equipment is subject to STAR and the Environmental Acceptability Demonstration is under review.

iv. **Record Keeping**

1) **PM**

There are no compliance record keeping requirements for this equipment. The potential uncontrolled PM emissions are less than the applicable emission standard.

2) **Opacity**

Regulation 6.09 does not require any specific record keeping requirements for opacity, however, Regulation 2.16, section 4.1.9.2 requires sufficient record keeping to assure compliance with the terms and conditions of the permit. The source is required to maintain records of the results of all visible emissions surveys and Method 9 tests performed.

3) **TAC**

This equipment is subject to STAR and the Environmental Acceptability Demonstration is under review.

v. **Reporting**1) **PM**

There are no periodic compliance reporting requirements for PM. The potential uncontrolled PM emissions are below the applicable emission standard.

2) **Opacity**

Regulation 6.09 does not require any specific reporting requirements for opacity, however, Regulation 2.16, section 4.1.9.3 requires reporting to assure compliance with the terms and conditions of the permit. The source is required to report any permit deviations or exceedances of the opacity standard in their semi-annual compliance reports.

3) **TAC**

Regulation 2.16, section 4.1.9.3 requires reporting to assure compliance with the terms and conditions of the permit. The source is required to submit notification to the District for approval any raw material change.

e. **Emission Unit U4 - Emergency generator**i. **Equipment:**

P/PE	Capacity	Installation Date	Applicable Regulation	Basis for Applicability
Diesel fueled	1200 HP	1969	6.09	The facilities are subject to the PM and NOx emission standard in Regulation

P/PE	Capacity	Installation Date	Applicable Regulation	Basis for Applicability
emergency generator	(800 KW)			6.09 and was installed before September 1, 1976.

ii. **Standards/Operating Limits**

1) **Unit Operation**

The source is required to operate the unit in compliance with the requirements in Regulation 1.09. The source shall limit the operation time to five hundred hours in any 12 consecutive month period in accordance with Regulation 2.03, section 5.1.

2) **Opacity**

Regulation 6.09, section 3.1 limits the visible emissions to twenty percent (20%) opacity.

3) **PM**

The emission standard for PM is determined in accordance with Regulation 6.09, section 3.2. The process weight rate is less than 1000 lb/hr. Therefore the PM limit is 2.58 lb/hr.

4) **NO_x**

The District has determined that diesel engine generator sets used solely for emergency or backup service are not subject to Regulation 6.09, section 4.

iii. **Monitoring**

1) **Unit Operation**

Regulation 6.09 does not require any specific monitoring requirements for opacity, however, Regulation 2.16, section 4.1.9.1 requires sufficient monitoring to assure compliance with the terms and conditions of the permit. The source is required to monitor the operating hours and the amount of fuel combusted in the unit as specified in Specific Condition S3.a.

2) **Opacity**

Regulation 6.09 does not require any specific monitoring requirements for opacity, however, Regulation 2.16, section 4.1.9.1 requires sufficient monitoring to assure compliance with the terms and conditions of the permit. The source is required to conduct periodic visible emission surveys to assure ongoing compliance with the opacity standard.

3) **PM**

There are no compliance monitoring requirements for this equipment. The potential uncontrolled PM emissions are less than the applicable emission standard.

4) **NO_x**

There are no compliance monitoring requirements for this equipment. This unit is not subject to Regulation 6.09, section 4.

iv. **Record Keeping**

1) **Unit Operation**

Regulation 6.09 does not require any specific monitoring requirements for opacity, however, Regulation 2.16, section 4.1.9.1 requires sufficient monitoring to assure compliance with the terms and conditions of the permit. The source is required to keep records of the operating hours and the amount of fuel combusted in the unit as specified in Specific Condition S3 a.

2) **Opacity**

Regulation 6.09 does not require any specific record keeping requirements for opacity, however, Regulation 2.16, section 4.1.9.2 requires sufficient record keeping to assure compliance with the terms and conditions of the permit. The source is required to maintain records of the results of all visible emissions surveys and Method 9 tests performed.

3) **PM**

There are no compliance record keeping requirements for this equipment. The potential uncontrolled PM emissions are less than the applicable emission standard.

4) **NO_x**

There are no compliance record keeping requirements for this equipment. This unit is not subject to Regulation 6.09, section 4.

v. **Reporting**1) **Unit Operation**

Regulation 6.09 does not require any specific reporting requirements for opacity, however, Regulation 2.16, section 4.1.9.3 requires reporting to assure compliance with the terms and conditions of the permit. The source is required to report any permit deviations or exceedances of the unit operation in their semi-annual compliance reports.

2) **Opacity**

Regulation 6.09 does not require any specific reporting requirements for opacity, however, Regulation 2.16, section 4.1.9.3 requires reporting to assure compliance with the terms and conditions of the permit. The source is required to report any permit deviations or exceedances of the opacity standard in their semi-annual compliance reports.

3) **PM**

There are no routine compliance reporting requirements for this equipment. The potential uncontrolled PM emissions are less than the applicable emission standard.

4) **NO_x**

There are no routine compliance reporting requirements for this equipment.

f. **Emission Unit U5 - Coal handling and transfer operation**i. **Equipment:**

P/PE	Capacity	Installation Date	Applicable Regulation	Basis for Applicability
Truck unloading operation	N/A	1969	6.09	The facilities are subject to the PM emission standards in Regulation 6.09

P/PE	Capacity	Installation Date	Applicable Regulation	Basis for Applicability
Conveyor (truck hopper to receiver)				and were installed before September 1, 1976.
Receiver				
Bucket elevator				
Conveyor (bucket elevator to bunker)			5.01	Regulation 5.01 establishes the requirements for Environmental Acceptability for TACs. The source is a Group I company with Category 1TACs which could exceed the de minimis values.
Coal storage bunker				
Moving scale				
Stoker hopper				

ii. **Standards/Operating Limits**

1) **PM**

The emission standard for PM is determined in accordance with Regulation 6.09, section 3.2:

$$\begin{aligned} \text{Total ash throughput} &= 19.82 \text{ ton/hr} \\ \text{PM limit} &= 4.10 * (19.82)^{0.67} = 30.33 \text{ lb/hr} \end{aligned}$$

2) **Opacity**

Regulation 6.09, section 3.1 limits the visible emissions to twenty percent (20%) opacity.

3) **TAC**

Regulation 5.21, section 2.2 establishes Environmental Acceptability Goals for TACs and Regulation 5.20 provides methodology for determining benchmark ambient concentration of TAC. In accordance with Regulation 5.20 and 5.21, the source shall not allow any TAC emissions to exceed environmentally acceptable levels.

iii. **Monitoring**

1) **PM**

There are no compliance monitoring requirements for this equipment. The potential uncontrolled PM emissions are less than the applicable emission standard.

2) **Opacity**

Regulation 6.09 does not require any specific monitoring requirements for opacity, however, Regulation 2.16, section 4.1.9.1 requires sufficient monitoring to assure compliance with the terms and conditions of the permit. The source is required to conduct periodic visible emission surveys to assure ongoing compliance with the opacity standard.

3) **TAC**

This equipment is subject to STAR and the Environmental Acceptability Demonstration is under review.

iv. **Record Keeping**

1) **PM**

There are no compliance record keeping requirements for this equipment. The potential uncontrolled PM emissions are less than the applicable emission standard.

2) **Opacity**

Regulation 6.09 does not require any specific record keeping requirements for opacity, however, Regulation 2.16, section 4.1.9.2 requires sufficient record keeping to assure compliance with the terms and conditions of the permit. The source is required to maintain records of the results of all visible emissions surveys and Method 9 tests performed.

3) **TAC**

This equipment is subject to STAR and the Environmental Acceptability Demonstration is under review.

v. **Reporting**

1) **PM**

There are no periodic compliance reporting requirements for PM. The potential uncontrolled PM emissions are below the applicable emission standard.

2) **Opacity**

Regulation 6.09 does not require any specific reporting requirements for opacity, however, Regulation 2.16, section 4.1.9.3 requires reporting to assure compliance with the terms and conditions of the permit. The source is required to report any permit deviations or exceedances of the opacity standard in their semi-annual compliance reports.

3) **TAC**

Regulation 2.16, section 4.1.9.3 requires reporting to assure compliance with the terms and conditions of the permit. The source is required to submit notification to the District for approval any raw material change.

III. Other Requirements

1. **Temporary Sources:** The source did not request to operate any temporary facilities.
2. **Short Term Activities:** The source did not report any short term activities.
3. **Emissions Trading:** N/A
4. **Alternative Operating Scenarios:** The company requested no alternative operating scenario in its Title V application.
5. **Compliance Status:** Louisville Medical Center Steam Plant is required to submit their annual Compliance Certification to the District on or before April 15th of each calendar year. As of the effective date of Permit 89-97-TV (R1), there are no compliance schedules in effect or progress reports required.
6. **Emission Factors:** The following emission factors shall be used unless more accurate District approved emission factors become available.

Equipment	Product	Emission Factor	EF Source
Boiler	Natural gas combustion	100 lb NOx/mmcf	AP-42 Section 1.4-1
		84 lb CO/mmcf	
		7.6 lb PM/mmcf	AP-42 Section 1.4-2
		7.6 lb PM10/mmcf	

Equipment	Product	Emission Factor	EF Source
		5.5 lb VOC/mmcf	
		0.6 lb SO ₂ /mmcf	
		1.8 lb Hexane/mmcf (HAP)	AP-42 Section 1.4-3
Boiler	Coal combustion	7.5 lb NO _x /ton	AP-42 Section 1.1-3
		6.0 lb CO/ton	
		32.3 lb SO ₂ /ton	
		16 lb PM/ton	AP-42 Section 1.1-4
		6 lb PM ₁₀ /ton	
		0.05 lb VOC/ton	AP-42 Section 1.1-14
		0.00042 lb lead/ton	AP-42 Section 1.1-16
		1.2 lb HCl/ton (HAP)	AP-42 Section 1.1-15
Truck Unloading	Coal	0.066 lb PM/ton	AP-42 Section 11.9-4
Conveyor (Unloading hopper to Receiver)	Coal	0.003 lb PM/ton	AP-42, Section 11.19.2-2
Receiver	Coal	0.003 lb PM/ton	AP-42, Section 11.19.2-2
Bucket Elevator	Coal	0.003 lb PM/ton	AP-42, Section 11.19.2-2
Conveyor (Elevator to Bunker)	Coal	0.003 lb PM/ton	AP-42, Section 11.19.2-2
Coal Storage Bunker	Coal	0.003 lb PM/ton	AP-42, Section 11.19.2-2
Moving Scale	Coal	0.003 lb PM/ton	AP-42, Section 11.19.2-2
Stoker Hopper	Coal	0.003 lb PM/ton	AP-42, Section 11.19.2-2
Bottom Ash Hopper	Ash	0.0051 lb PM/ton	AP-42, Section 11.12-2

Equipment	Product	Emission Factor	EF Source
Sifter Hopper	Ash	0.0051 lb PM/ton	AP-42, Section 11.12-2
Grinder	Ash	0.0051 lb PM/ton	AP-42, Section 11.12-2
Ash Silo	Ash	0.72 lb PM/ton	AP-42, Section 11.12-2
Truck Loading	Ash	0.995 lb PM/ton	AP-42, Section 11.12-2

7. Insignificant Activities

Equipment	Quantity	Basis for Exemption
One (1) #1 fuel oil storage tank with a capacity of 1,000 gallons	1	Regulation 2.02, 2.3.9.2

- a. Insignificant Activities are only those activities or processes falling into the general categories defined in District Regulation 2.02, Section 2, and not associated with a specific operation or process for which there is a specific regulation. Equipment associated with a specific operation or process (Emission Unit) shall be listed with the specific process even though there may be no applicable requirements. Information contained in the permit and permit summary shall clearly indicate that those items identified with negligible emissions have no applicable requirements.
- b. Activities identified In District Regulation 2.02, Section 2, may not require a permit and may be insignificant with regard to application disclosure requirements but may still have generally applicable requirements that continue to apply to the source.
- c. For all insignificant activities that emit regulated air pollutants for which the company has accepted a plant-wide synthetic minor limit, the company shall maintain sufficient records to calculate the emissions and report those emissions in the semi-annual compliance reports and the annual emissions inventory report.
- d. The Insignificant Activities table is correct as of the date the permit was proposed for review by the USEPA, Region 4. The company shall submit an updated list of insignificant activities annually with the Title V compliance certification pursuant to District Regulation 2.16, section 4.3.5.3.6.